

## Multifunctional Coating for Crew Cabin Surfaces and Fabrics, Phase I

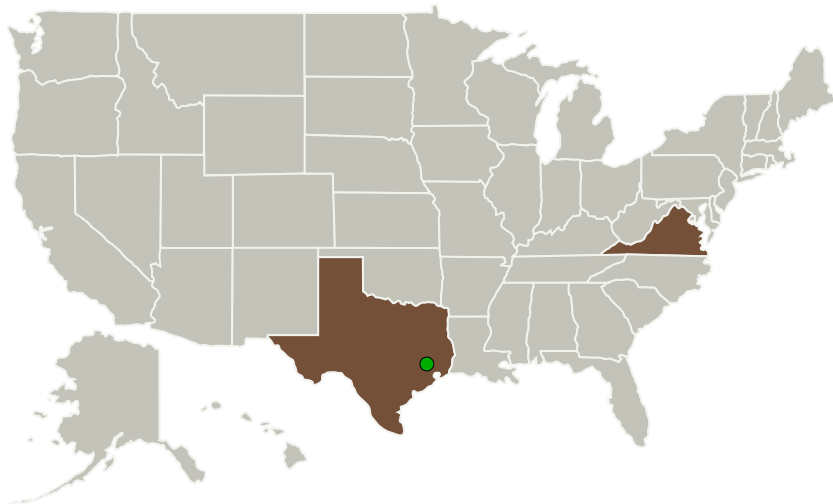
Completed Technology Project (2014 - 2014)



## Project Introduction

NASA's crewed spacecrafts require routine cleaning of particulate, moisture, organic, and salt contaminants on the crew cabin surfaces and fabrics. Self-cleaning surfaces will help in reducing the crew's effort in cleaning the cabin and reduce the amount of wipes used for cleaning. It will also be beneficial if the surfaces can be made antimicrobial to reduce the health risks of the crew members. Surface treatments also should be durable for 3 to 5 years long missions. In the proposed Phase I effort, a novel multifunctional coating will be developed which has both superhydrophobic and antimicrobial properties. Antimicrobial treatment of cabin crew surfaces do not resist the accumulation of contaminants on the surfaces. In the proposed Phase I Materials Modification Inc. (MMI) will develop a multifunctional coating for providing antimicrobial and self-cleaning properties to the spacecraft crew cabin surfaces based on its superhydrophobic technology. The best coating formulation selected from the Phase I effort will be incorporated in a prototype spray cans for NASA applications.

## Primary U.S. Work Locations and Key Partners



Multifunctional Coating for Crew Cabin Surfaces and Fabrics, Phase I

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Organizations Performing Work	Role	Type	Location
Materials Modification, Inc.	Lead Organization	Industry Small Disadvantaged Business (SDB)	Fairfax, Virginia
● Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas

## Primary U.S. Work Locations

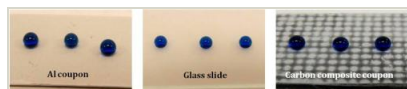
Texas	Virginia
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## Project Transitions

**June 2014:** Project Start**December 2014:** Closed out**Closeout Documentation:**

- Final Summary Chart(<https://techport.nasa.gov/file/137487>)

## Images

**Briefing Chart**

Multifunctional Coating for Crew Cabin Surfaces and Fabrics, Phase I  
(<https://techport.nasa.gov/image/128028>)

## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Organization:**

Materials Modification, Inc.

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

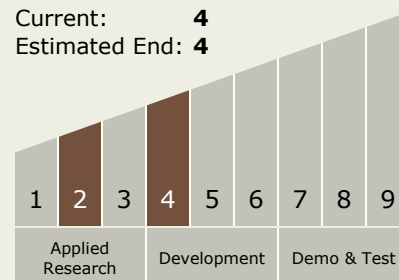
Carlos Torrez

**Principal Investigator:**

Krishnaswamy K Rangan

## Technology Maturity (TRL)

Start: 2  
Current: 4  
Estimated End: 4



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## Technology Areas

### Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - └ TX06.1 Environmental Control & Life Support Systems (ECLSS) and Habitation Systems
    - └ TX06.1.4 Habitation Systems

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System